**202206UECM3463OE3b**

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**Review of preview**

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|---|---|
| **Started on** | Sunday, 14 August 2022, 04:56 PM |
| **Completed on** | Sunday, 14 August 2022, 04:56 PM |
| **Time taken** | 6 secs |
| **Grade** | **0** out of a maximum of 10 (**0**%) |

**1**
Marks: 1

For a certain insurance, individual losses in 2020 were Pareto distributed with parameters α = 3 and θ= 1400. A deductible of 140.0 is applied to each loss. In 2021, individual losses have increased 5%. A deductible of 140.0 is still applied to each loss. Determine the standard deviation of amount paid per loss. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 1627.503794
1274.95
Marks for this submission: 0/1.

**2**
Marks: 1

Let the frequency distribution be negative binomial with r = 3 and β =4. Let the severity distribution has the exponential distribution with mean 40. Determine E(S ^ 400). _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 311.1
Marks for this submission: 0/1.

**3**
Marks: 1

You are given:

- Claim counts per year follow a negative binomial distribution with r = 2, β = 4.00.
- Claim sizes follow a Pareto distribution with α = 6, θ = 10290.
- Claim counts and claim sizes are independent.

A stop-loss reinsurance contract reinsures 100% of the losses above an aggregate limit *u*. Using the normal approximation, determine the *u* for which the probability that aggregate claims are greater than *u* is 5%. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 40876.538687
Marks for this submission: 0/1.

**4**
Marks: 1

Let the frequency distribution be negative binomial with r = 4 and β =3. Let the severity distribution has the exponential distribution with mean 27. Determine $F_S(34)$. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.0269
Marks for this submission: 0/1.

**5**
Marks: 1

Claim sizes follow an exponential distribution with θ =4.50. Claim counts are independent of claim sizes, and have the following distribution:

| n | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| $P_n$ | 0.43 | 0.29 | 0.21 | 0.07 |

Calculate $F_S(8)$. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.800836
Marks for this submission: 0/1.

**6**
Marks: 1

A random variable has an exponential distribution with mean 20. It is to be discretized using the method of rounding with span 70. Determine the mean of the discretized distribution. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 12.54294
Marks for this submission: 0/1.

**7**
Marks: 1

Prescription drug losses, S, are modeled assuming
the number of claims has a geometric distribution
with mean 10.00, and the amount of each prescription is 64.
Calculate E[(S-160)+]. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 504.883546
Marks for this submission: 0/1.

**8**
Marks: 1

Claim counts follow a Poisson distribution with mean 3. Claim sizes follow an exponential distribution with θ = 600. This severity distribution is discretized using the method of rounding with span 50. Claim counts and claim sizes are independent. A stop-loss reinsurance contract has a deductible of 130.0. Calculate expected losses paid by the reinsurance contract. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 1810.7693
1377.84
Marks for this submission: 0/1.

**9**
Marks: 1

A company provides insurance to a concert hall for losses due to power failure. You are given:

- The number of power failures in a year has a Binomial distribution with parameters m = 8 and q = 0.35.
- The distribution of loss amount due to a single power failure is:

| Loss Amount | 10 | 20 | 30 | 40 |
|---|---|---|---|---|
| Probability | 0.28 | 0.28 | 0.28 | 0.16 |

- There is an annual deductible of 22.

Calculate the expected amount of claims paid by the insurer in one year. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 44.239649
Marks for this submission: 0/1.

**10**

Marks: 1

A stop-loss reinsurance pays 80% of the excess of aggregate claims above 1,090, subject to maximum payment of 440. For aggregate claims, S, you are given:

- $E[(S-1{,}090)_+] = 470$
- $E[(S-2{,}180)_+] = 235$
- The probability of an aggregate claim amount between 1,090 and 2,180 is zero.

Determine the total amount of claims the reinsurer expects to pay. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 94.862385
Marks for this submission: 0/1.